94. Dramatic Improvement of the Visual Function by Adhesiotomy in the Optochiasmatic Region

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We have treated 121 patients with the disturbances of visual field and visual acuity which were caused by parasellar tumors, aneurysm, papilledema, etc. Among them, 10 cases were diagnosed as adhesive arachnoiditis of optochiasmatic region. In two cases of them, the narrowing of the visual field was remarkably improved after PEG. We have performed adhesiotomy for six cases with excellent results. All of the patients uniformly recognized brighter vision on the next day of the operation. And also improvement of the visual field and acuity was recognized subjectively and abjectively day by day after operation. The visual field recovered to nearly normal range and the circumferential blindness disappeared within two weeks. In one case, visual acuity improved rapidly from 0.01 to 0.7 on Randolt's chart. In case of a woman with complete blindness, sensation of light returned soon after the operation. She could read the title of a book in several weeks.

Judging from the good results, we have concluded that it is essentially important to put the nerve tissue in "circulating CSF".

95. Traumatic Clear-Cut Bitemporal Hemianopsia

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9 cases of indirect injury of the optic chiasm are reported. In 4 cases the visual field showed clear-cut bitemporal hemianopia and the optic chiasm was inspected

at operation.

All our cases are young men about 25 years of age, with elastic skulls. In many cases the period of unconsciousness was about 2 or 3 days and the site of injury was frontal and near the midline. Frontal base fractures were present in 8 cases. It seems that forcible frontal injury with a frontal base fracture leads a possible distension of the frontal part of the contents of the elastic skull.

The chiasm was inspected in 4 cases of clear-cut bitemporal hemianopia. In 3 cases among them, there was no evidence of macroscopic injury which explain the clear-cut visual field defects, but in 1 case careful inspection of the chiasm revealed the softening in the central chiasm.

The visual pathways pass through the circle of willis, coursing below the superior group of vessels (anterior cerebral arteries and anterior communicating artery) and above the inferior group of vessels (posterior cerebral arteries, basilar artery, posterior communicating artery, and internal carotid artery). The crossing fibers in the central portion of chiasm receive their arterial supply solely from the inferior group of vessels. These inferior group of vessels at their origin are firmly fixed to the base of skull, and the forcible frontal injury which cause the rapid movement of the brain relative to the skull may result in the tearing of these small vessels.

It seems probable that the mechanism is not a single factor but one or more o several, but the clear-cut bitemporal hemianopia is most reasonably explained by the interruption of the blood supply of the "central" chiasm.

In all of 4 cases of complete bitemporal hemianopia operative freeing of the arachnoidal adhesion of the optic nerves and chiasm resulted in scarcely any change of the visual field, probably because the arachnoidal adhesion is the secondary change of this lesion. Nevertheless the operative exploration is necessary, because such operable lesions as intrasellar hematomas may be present. Pneumography and angiography not always give us precise enough information of the damaged chiasm.

96. Combined Therapy of Pneumoencephalography and Steroid in Cases of the Posttraumatic Encephalopathies with Enlarged Cerebral Ventricles

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